

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000747**Date Inspected:** 22-Oct-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Li Gang & She Zhi**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Caltrans Mockup**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mike Hasler was present to observe the fit up, welding and related activities associated with the fabricating of Caltrans Mock-up, 77M, 89M, 114M and U-Rib Trial Assembly, for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery Company (ZPMC) facility on Changxing Island.

Item	Description	WBS	Dwg No.	Status
1	Skin Plate C	NA	NA	Crack Tackweld

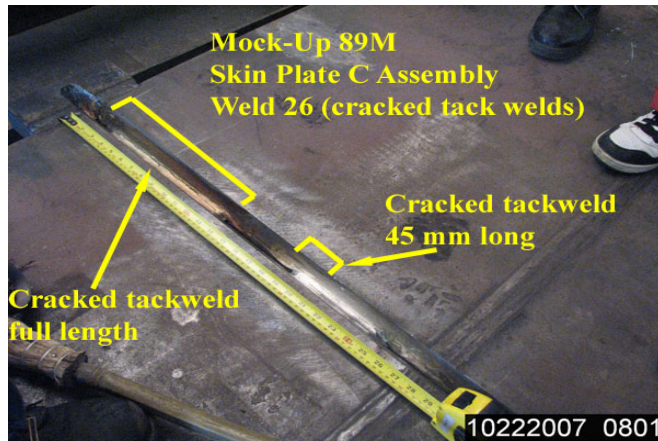
Mock-Up 89M, Skin Plate C (upper/lower): Caltrans QA Inspector observed two cracked tack welds at complete joint penetration (CJP) weld joint fitup, joining the upper and lower plate sections. ZPMC QC inspector, Mr. Ley Tao notified Caltrans QA Inspector that ZPMC observed cracked tack welds at the plate splice weld, weld number 26. Caltrans QA Inspector verified the cracked tack welds. Caltrans QA Inspector observed that one of the tack welds appeared to be cracked, full length of the weld and the other tack weld showed to be cracked, 45 mm in length. Caltrans QA Inspector witnessed the complete removal of the two tack welds, repair welding and the magnetic particle testing (MT) prior to welding and after welding. The MT testing was performed by ZPMC QC inspector, Mr. Cai Xinxin. The MT appeared to be in conformance with the contract specifications.

The repair welding was performed in accordance with WPS-B-P-2211-B-U3b, Revision 1. The welder is identified as Mr. Han Xiaofeng, welder stamp 054467. Caltrans QA Inspector observed ZPMC Quality Control (QC) Certified Welding Inspector (CWI) Mr. Xu Le Feng and Bureau Veritas inspector, Mr. Hou Jing Yao monitoring the repair welding. Caltrans QA Inspector measured current welding parameters at approximately 195 amps and 265 millimeters per minute (mm/min) travel speed. Preheat and interpass temperatures were verified during welding activities. The preheat temperature prior to the start of welding measures more than 110 Celsius (230 degree Fahrenheit) but less than 232 Celsius (450 degrees Fahrenheit) during maximum interpass temperature verification. SMAW consumable is

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verified and identified as TL-508, classification E7018, specification AWS A5.1, and diameter 5.0 mm (.196 inch). Following digital pictures illustrates cracked tackwelds and ZPMC MT.



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|---|------------------|----|----|------------------|
| 2 | Skin Plate E & D | NA | NA | ZPMC Machining |
| <p>Mock-Up 89M, Skin Plate E & D: Caltrans QA Inspector observed shop workers machining the skin plates. Caltrans observed plate perimeter, weld bevel (45 degree) being machined at Skin Plate E, piecemark MA38 and Skin Plate D, outside perimeter, plate side (90 degree) to plate surface. The machined surface appeared to be smooth, uniform and in conformance with the contract specifications.</p> | | | | |
| 3 | Skin Plate C/D | NA | NA | Work in Progress |
| <p>Mock-Up 89M, Skin Plate C/D, Longitudinal Stiffener Plates: Caltrans QA Inspector observed welder tack welding pre-assembled stiffener plates. The preassembled stiffener plates are identified as mp535A-1 to mp535B-1 to mp540-1, complete joint penetration (CJP) weld. Caltrans QA Inspector observed flux cored arc welding (FCAW) in progress. The welder is observed welding multi-pass tack welds in the flat position. The welder is identified as Mr. Han Xiaofeng, welder stamp 054467. The welder is using welding procedure specification WPS-B-P-2211-B-U3b, Revision 1. Caltrans QA Inspector observed ZPMC Quality Control (QC) Certified Welding Inspector (CWI) Mr. Sha Zhi and Bureau Veritas inspector, Mr. Li Gang monitoring welding activities at the workstation. Caltrans QA Inspector measured current welding parameters at approximately 200 amps and 275 millimeters per minute (mm/min) travel speed. Preheat and interpass temperatures were verified during welding activities. The preheat temperature prior to the start of welding measures more than 110 Celsius (230 degree Fahrenheit) but less than 232 Celsius (450 degrees Fahrenheit) during maximum interpass temperature verification. SMAW consumable is verified and identified as TL-508, classification E7018, specification AWS A5.1, and diameter 5.0 mm (.196 inch). Following digital picture illustrates welding in progress.</p> | | | | |

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Summary of Conversations:

As identified within the contents of this report.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Hasler,Mike	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer
